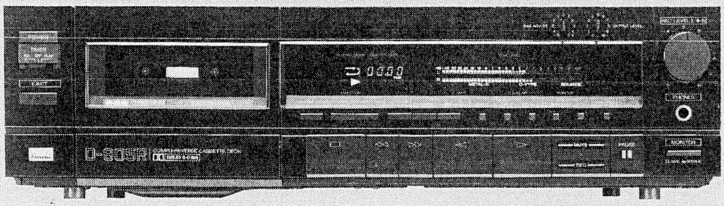
SERVICE MANUAL

COMPU-REVERSE CASSETTE DECK

SANSUI D-905R



CAUTION

1. Parts identified by the⚠symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

SANSUI ELECTRIC CO., LTD.

•SPECIFICATIONS

Track format	4-track/2-channel system
Tape speed	4.8 cm/sec.
Heads (3-head configuration)	
Rec/pb head	Dioxide titanium coating HIGH-Bs ferrite
Erase head	Double-gap HIGH-Bs ferrite
Motor	Capstan: Electronically Controlled DC Motor Reels: DC Motor
Wow/flutter	0.034% max (WRMS) ±0.7%W.Peak
Fast forwarding (rewinding) time	Approx. 85 sec. (for C-60 tape)
Frequency response (—20 VU recording/playback)	
Normal tape (LH)	20 to 18,000 Hz (30 to 17,000 Hz ±3 dB)
Chrome tape	20 to 20,000 Hz (30 to 18,000 Hz ±3 dB)
Metal tape	20 to 21,000 Hz (30 to 19,000 Hz ±3 dB)
Signal to noise ratio (recording/playback with metal tape) (3% T.H.D.)	
DOLBY NR OFF	Better than 60 dB
DOLBY-B NR ON	Better than 68 dB
DOLBY-C NR ON	Better than 74 dB
Erasure factor (Metal Tape)	more than 65 dB at (1 kHz)
Recording bias frequency	85 kHz
Input sensitivity/impedance	
LINE IN (REC)	80 mV/50 kohms
Power requirements	110 ~ 120V/220 ~ 240 V 50/60 Hz
For U.S.A. and Canada	120V (60 Hz)
Power consumption	32 watts
Dimensions	435 mm (17-1/8")W 115 mm (4-1/2")H 282 mm (11-1/8")D
Weight	5.4 kg (11.9 lbs) net
For U.S.A. and Canada	4.9 kg (10.8 lbs) net

* Design and specifications subject to changes without notice for improvements.

* Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double D symbol are trade marks of Dolby Laboratories Licensing Corporation.

CAUTION

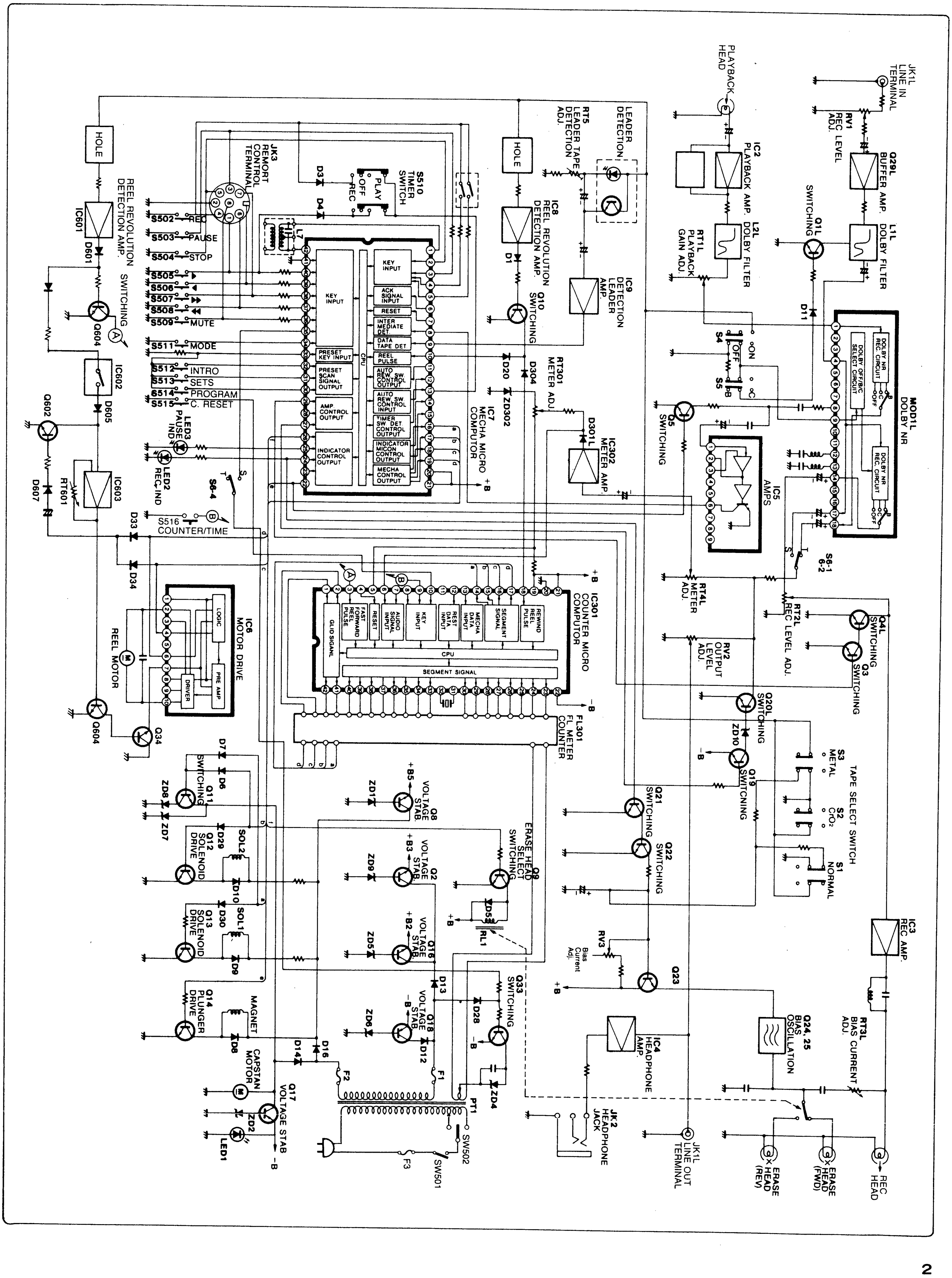
1. The symbols, UL, CSA, SA, BS, UK, EU, AS and XX on the parts list and the schematic diagram mean followings respectively.

   UL........................ Manufactured for U.S.A market.
   (Underwriters Laboratories approved model.)
   CSA..................... Manufactured for Canadian market.
   SA........................ Manufactured for South African market.
   BS, UK .... Manufactured for United Kingdom market.
   EU .... Manufactured for European market.
   AS........................ Manufactured for Australian market.
   XX........................ Standard Version.
   NON MARK........ Common Parts.

2. Some printed circuit boards are not supplied as the assembled. To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.

3. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.

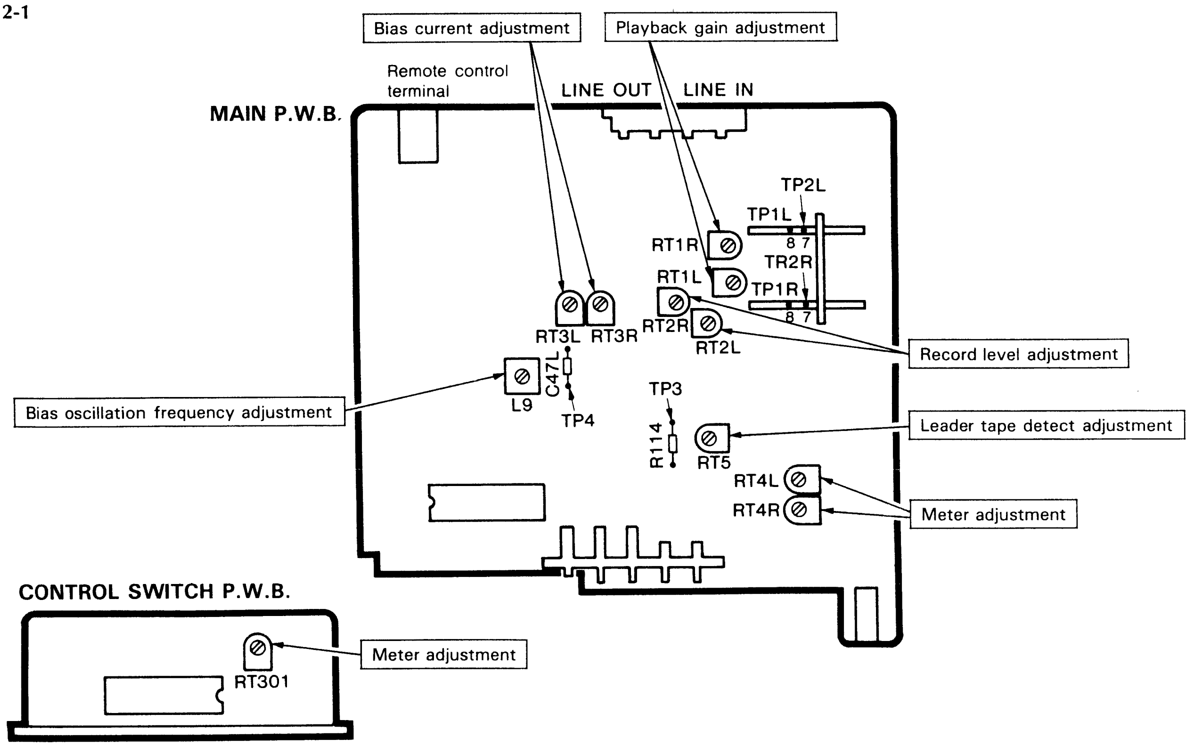
1. BLOCK DIAGRAM


JK1L LINE IN TERMINAL
RV1 REC LEVEL ADJ.
Q28L BUFFER AMP.
L1L DOLBY FILTER
Q1L SWITCHING
D1
MOD1L DOLBY NR
DOLBY NR REC CIRCUIT
DOLBY OFF/B/C SELECT CIRCUIT
PLAYBACK HEAD
IC2 PLAYBACK AMP.
L2L DOLBY FILTER
RT1L PLAYBACK GAIN ADJ.
S4 ON OFF
S5 B C
Q5 SWITCHING
IC5 AMPS
S6-1 6-2
RT4L METER ADJ.
RT2L REC LEVEL ADJ.
Q4L SWITCHING
Q3 SWITCHING
RV2 OUTPUT LEVEL ADJ.
Q20L SWITCHING
ZD10
Q19 SWITCHING
S3 METAL
S2 CrO2
S1 NORMAL
TAPE SELECT SWITCH
Q21 SWITCHING
Q22 SWITCHING
RV3 Bias Current Adj.
Q23
IC3 REC AMP.
RT3L BIAS CURRENT ADJ.
Q24, 25 BIAS OSCILLATION
IC4 HEADPHONE AMP.
JK2 HEADPHONE JACK
JK1L LINE OUT TERMINAL
ERASE HEAD (REV)
ERASE HEAD (FWD)
REC HEAD
LEADER DETECTION
RT5 LEADER TAPE DETECTION ADJ.
IC9 DETECTION LEADER AMP.
HOLE
IC8 REEL REVOLUTION DETECTION AMP.
Q10 SWITCHING
D20
D304
RT301 METER ADJ.
ZD302
D301
IC302 METER AMP.
IC7 MECHA MICRO COMPUTOR
KEY INPUT
ACK SIGNAL INPUT
RESET
INTER MEDIATE DET.
DATA TAPE DET
REEL PULSE
AUTO REW. SW SCAN CONTROL OUTPUT
AUTO REW. SW CONTROL INPUT
TIMER SW DET CONTROL OUTPUT
INDICATOR MICON CONTROL OUTPUT
MECHA CONTROL OUTPUT
PRESET KEY INPUT
PRESET SCAN SIGNAL OUTPUT
AMP CONTROL OUTPUT
INDICATOR CONTROL OUTPUT
CPU
S510 TIMER SWITCH
PLAY OFF REC
D3
D4
L7
JK3 REMORT CONTROL TERMINAL
S502 REC
S503 PAUSE
S504 STOP
S505
S506
S507
S508
S509 MUTE
S511 MODE
S512 INTRO
S513 SETS
S514 PROGRAM
S515 C. RESET
LED3 PAUSE IND.
LED2 REC IND
S6-4
S516 COUNTER/TIME
D33
D34
IC301 COUNTER MICRO COMPUTOR
GLID SIGNAL
FAST FORWARD REEL PULSE
RESET
AUDIO SIGNAL INPUT
KEY INPUT
REST DATA INPUT
MECHA DATA INPUT
SEGMENT SIGNAL
REWIND REEL PULSE
SEGMENT SIGNAL
FL301 FL METER COUNTER
+B
-B
REEL REVOLUTION DETECTION AMP.
IC601
D601
Q604 SWITCHING
IC602
D605
Q602
IC603
RT601
D607
IC6 MOTOR DRIVE
LOGIC
PRE AMP
DRIVER
REEL MOTOR
Q604
Q34
D7
D6
Q11 SWITCHING
ZD8
ZD7
D29
SOL2
Q12 SOLENOID DRIVE
D10
D30
SOL1
Q13 SOLENOID DRIVE
D9
Q14 PLUNGER DRIVE
MAGNET
D8
CAPSTAN MOTOR
Q17 VOLTAGE STAB
ZD2
LED1
D14
D16
Q8 VOLTAGE STAB
+B5
ZD1
Q2 VOLTAGE STAB
+B3
ZD9
Q16 VOLTAGE STAB
+B2
ZD5
D13
Q18 VOLTAGE STAB
ZD6
D12
Q9 ERASE HEAD SELECT SWITCHING
D5
RL1
Q33 SWITCHING
D28
ZD4
F1
F2
F3
PT1
SW502
SW501

2. ADJUSTMENTS

• Adjustment Points

Fig. 2-1


Bias current adjustment
Playback gain adjustment
Remote control terminal
LINE OUT
LINE IN
MAIN P.W.B.
TP2L
TP1L
RT1R
TR2R
RT1L
TP1R
RT3L
RT3R
RT2R
RT2L
Record level adjustment
C47L
L9
TP4
TP3
Bias oscillation frequency adjustment
R114
RT5
Leader tape detect adjustment
RT4L
RT4R
Meter adjustment
CONTROL SWITCH P.W.B.
RT301
Meter adjustment

• Tools, Test Tape, Check Tape

1. Head Attachment Tools
2. 400 Hz, Dolby Standard Tape
3. 10 kHz, Azimuth Adjustment Tape
4. 3,000 Hz, Tape Speed Adjustment Tape
5. Mirror Tape (Tape Run Check)
6. Normal "Standard" Tape (TDK AD Tape)
7. Chrome "Standard" Tape (TDK SA Tape)
8. Metal Tape (TDK MA Tape)

• Measuring Instruments

1. Standard wave Oscillator
2. Electronic Voltmeter
3. Attenuator
4. Wave Frequency Counter

• Knob Position

Adjust the position of the knobs and switches to the positions on the table below if no other indication is given.

Recording level adjustment (RV1)	Maxm.
Output adjustment (RV2)	Maxm.
Dolby NR switch (S4)	OFF
Tape changeover switch (S1 ~ 3)	See Note 1.
Monitor switch (S6)	TAPE
Bias fine adjustment (RV3)	CENTER

Note 1: Switch the changeover switch as follows for tape where it is used.

Tape used	Changeover switch (S1 ~ 3)
No tape used	NOR-I
Test tape	NOR-I
Normal "standard" tape	NOR-I
Chrome "standard" tape	CrO_2-II
METAL tape	METAL-IV

Remove the cassette lid and then clean the heads, pressure roller and capstan using alcohol; then perform adjustment according to the following procedure.

2-1. Tape Speed Adjustment

Input	Adjustment value	Adjustment point
Tape speed adjustment tape	$3{,}000^{+30}_{-10}$ Hz	Semi-variable volume inside motor

• Adjustment Procedure

Connect the wave frequency counter to the LINE OUT terminal and playback the test tape after heat running for 20 minutes, Set to the intermediate position of the tape.

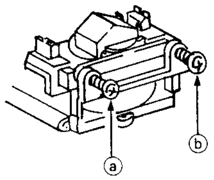
2-2. Azimuth Adjustment of Recording/Playback Head

Input	Adjustment value	Adjustment point
Azimuth adjustment tape	Output Maximum	Head azimuth adjustment screw

• Adjustment Procedure

1) Connect the electronic voltmeter to the LINE OUT terminal, playback the test tape and proceed to adjustment.
   Adjust the section ⓑ at forward, and the screw at the section ⓐ at reverse. (See Fig. 2-2)
   When the maximum value differs between both channels, adjust to the maximum value of L channel. At this time make sure that the difference of the maximum value between both channels is within 2 dB. When the difference is excessive, proceed to readjustment.
2) If the azimuth has been off considerably, readjust by means of the head attachment tools.

Fig. 2-2



2-3. Adjustment of Playback Gain and Meter

1) Adjustment of Playback Gain

Input	Adjustment value	Adjustment point
400 Hz Dolby standard tape	500 mV ±0.2 dB	RT1L, R

• Adjustment Procedure

Connect the electronic voltmeter to the LINE OUT terminal, play back the Dolby standard tape, and perform adjustment so that reading on the electronic voltmeter is the adjustment value.

2) Adjustment of Meter

Input	Adjustment value	Adjustment point
400 Hz Dolby standard tape	500 mV − 0.5 dB	RT4L, R
	500 mV − 37 dB	RT301

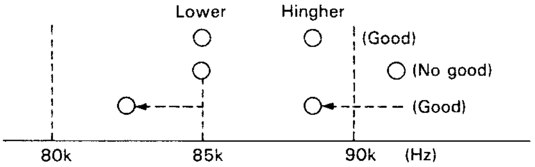
• Adjustment Procedure

1. Connect the low frequency oscillator to the recording terminal through the attenuator, and set the mode to recording.
2. Set the monitor switch to SOURCE, apply a signal of 400 Hz, and adjust the attenuator so that the output voltage of the LINE OUT terminal is 500 mV − 0.5 dB.
3. Adjust the RT4L, R at this time so the point of 0 dB on the meter changes from OFF to ON. (At this time, adjust RT301 at the center.)
4. Then, adjust the attenuator so that the output voltage of the LINE OUT terminal is 500 mV − 37 dB for both L, R ch.
5. Adjust the RT301 at this time so that the point of 40 dB of the meter changes from ON to OFF for both L, R ch.

2-4. Adjustment of Bias Oscillation Frequency

Set the changeover switch to the metal position. Then, set the forward and reverse sides to a recording status, and adjust L9 so that the lower side of the oscillation frequency of TP4 is 85 kHz ±0.5 kHz. At this time, confirm one side is 85 kHz ±5 kHz. If off positioned, drop the lower side so that both are 85 kHz ±5 kHz by adjusting L9.

Fig. 2-3



2-5. Coarse Adjustment of Recording level

Input	Adjustment value	Adjustment point
1.2 kHz	500 mV − 10 dB	RT2L, R

• Adjustment Procedure

Connect the low frequency oscillator to the LINE IN terminal, apply a signal of 1.2 kHz, and set the mode to recording. Then, set the MONITOR switch to SOURCE, and adjust the output of the low frequency oscillator so that the voltage of the LINE OUT terminal is 500 mV − 10 dB. Further, change the MONITOR switch to TAPE, and adjust RT2L, R so that the voltage at the LINE OUT terminal is 500 mV − 10 dB.

2-6. Adjustment of Bias Current and Recording/Playback Output Level

Set RT3L, R to the middle positions and perform playback checks and adjustments for the tapes and recording levels indicated in the following table.

Procedure	Tape	Tape select switch	Recording level			Playback level		Adjustment procedure (next page)
			Frequency (Hz)	Level	Adjustment	Level	Adjustment	
1	Normal "standard" tape	NOR	1.2k/12k	500 mV − 23 dB	ATT	within +2 ±0.5 dB	RT3L, R	1)
2	Normal "standard" tape	NOR	1.2k	500 mV − 10 dB	ATT	within +1 ±0.5 dB	RT2L, R	2)
3	Normal "standard" tape	NOR	1.2k/12k	500 mV − 23 dB	ATT	within +2 ±0.5 dB	Confirm	1)
4	Chrome "standard" tape	CrO_2	1.2k/12k	500 mV − 23 dB	ATT	within ±3 dB	Confirm	1)
5	METAL tape	METAL	1.2k/12k	500 mV − 23 dB	ATT	within ±3 dB	Confirm	1)

• Adjustment Procedure

1) Fine Adjustment of Bias Current

1. Connect the low frequency oscillator to the LINE IN terminal through the attenuator. Connect the electronic voltmeter to the LINE OUT terminal. Apply a signal of 1.2 kHz from the LINE IN terminal, and set the mode to recording. Then set the MONITOR switch to SOURCE, adjust the output of the low frequency oscillator so that the voltage at the LINE OUT terminal is 500 mV − 10 dB and then, by adjusting the attenuator, adjust it to 500 mV − 23 dB.
2. Change the MONITOR switch to TAPE. Then change the frequency of the low frequency oscillator to 1.2 kHz and 12 kHz alternately, and adjust RT3L, R so that the difference in output between the two frequencies is within +2 ±0.5 dB. In this case, make adjustment so that the output at 12 kHz is sure to be greater than that at 1.2 kHz.

* Just a check is carried out for chrome and metal tapes. If the specification of ±3 dB is not satisfied, carry out readjustment with a normal tape.

2) Adjustment of Recording Level

1. Connect the low frequency oscillator to the LINE IN terminal, apply a signal of 1.2 kHz, and set the mode to recording. Then set the MONITOR switch to SOURCE, and adjust the output of the low frequency oscillator so that the voltage at the LINE OUT terminal is 500 mV − 10 dB.
2. Change the MONITOR switch to TAPE, and adjust RT2L, R so that the voltage at the LINE OUT terminal is 500 mV − 9 dB.

2-7. Dolby NR Operation Check

• Dolby B-Type

1) Record on a metal tape at a Dolby level of 5 kHz, −40 dB. Continue recording with "Dolby OFF" and "Dolby B".
2) Playback the "Dolby OFF" portion and confirm that the output difference between "Dolby OFF" and "Dolby B" is within 10 dB.

• Dolby C-Type

1) Record on a metal tape at a Dolby level of 1 kHz, −40 dB. Continue recording with "Dolby OFF" and "Dolby C".
2) Playback the "Dolby OFF" portion and confirm that the output difference between "Dolby OFF" and "Dolby C" is within 16 dB.

2-8. Operation Check of Fine Adjustment of Bias

Connect the low frequency oscillator to the LINE IN terminal, apply a signal of 12 kHz, and adjust the voltage at the LINE OUT terminal to 500 mV − 23 dB. Record a normal tape at that level and then play it back. Suppose the level is 0 dB when the fine adjustment knob for bias current is set at middle. Confirm the level is beyond +2 dB when the knob is turned counterclockwise all the way, and beyond −2 dB when clockwise all the way.

2-9. Adjustment of Leader Tape Detector Circuit

Position RT5 at 12 o'clock in terms of the clock pointers. Play back reversely the magnetic portion of Normal "standard" tape, and adjust RT5 so that the DC voltmeter connected between TP3 and chassis ground indicates 1.5 ~ 2.0V. Then confirm with the same tape that the head reverses in the reverse mode.

2-10. Inspection and Adjustment of Cassette Mechanism

NO.	Inspection item		Measurement procedure	Standard value
1	Pinch roller compression (for L, R)		Measure by tension gauge (Fig. 2-4)	450g min.
	Tape drive force		Measure by torque cassette (Fig. 2-4)	90g min.
2	Reel motor swing torque		Measure by tension gauge (Fig. 2-5)	3.0—8.0 g-cm
3	FF/REW torque		Measure by torque cassette	90—170 g-cm
4	Wind torque		Measure by torque cassette	30—70 g-cm
5	Rewind torque	AT PLAY	Measure by torque cassette	3.5—7.0 g-cm
		AT FF/REW	Measure by tension gauge	6.0—9.5 g-cm
6	Erase head lock force allowance (for both L, R)		Measure by tension gauge (Fig. 2-6)	80g min.

Fig. 2-4

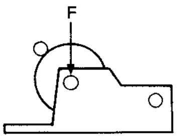


Fig. 2-5

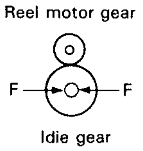
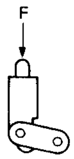


Fig. 2-6



3. DISASSEMBLY

Fig. 3-1

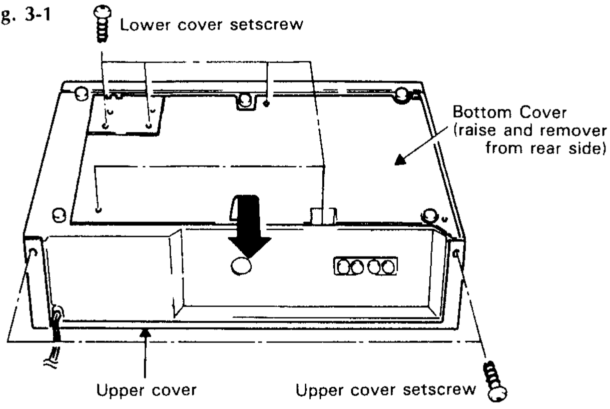

Lower cover setscrew
Bottom Cover
(raise and remover
from rear side)
Upper cover
Upper cover setscrew

Fig. 3-2

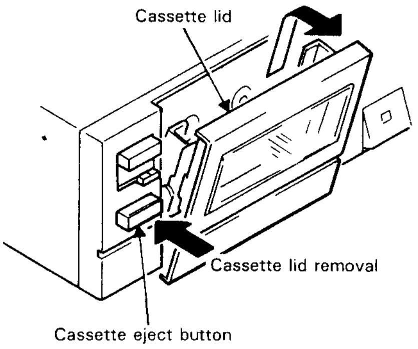
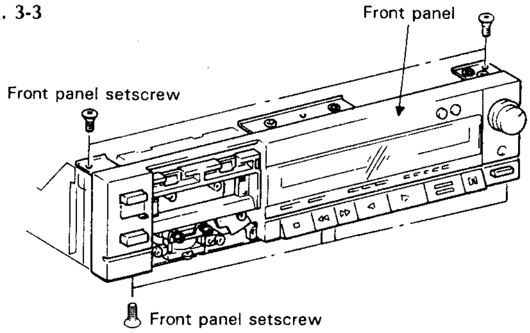

Cassette lid
Cassette lid removal
Cassette eject button

Fig. 3-3


Front panel
Front panel setscrew
Front panel setscrew

Note:
Before extracting the front panel, detach the leads of the cassette chassis from the hooks (4 positions) on the cabinet. (Fig. 3-4)

Fig. 3-4

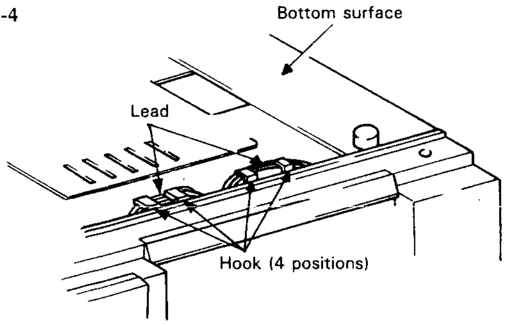

Bottom surface
Lead
Hook (4 positions)

Fig. 3-5

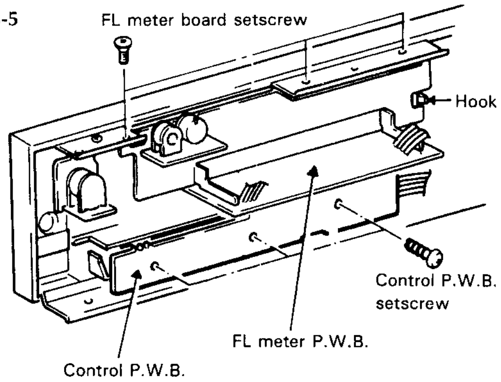

FL meter board setscrew
Hook
Control P.W.B.
setscrew
FL meter P.W.B.
Control P.W.B.

Fig. 3-6

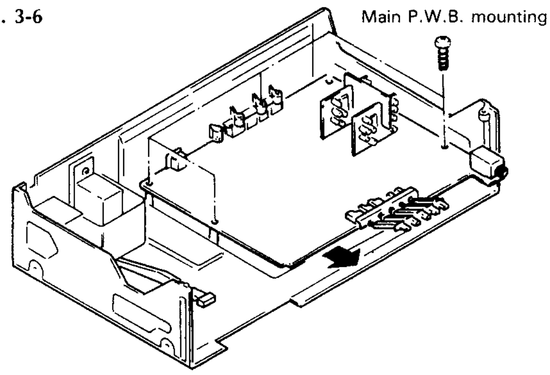
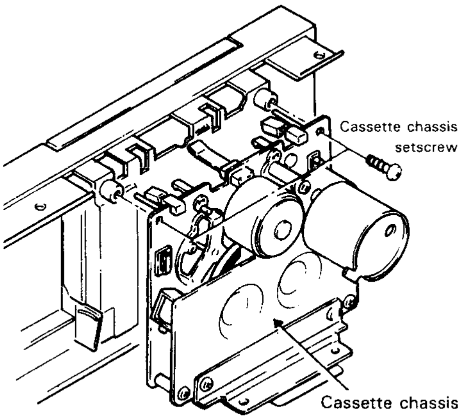

Main P.W.B. mounting

Fig. 3-7


Cassette chassis
setscrew
Cassette chassis

Note:
The leads for the recording/playback head and those for the erasing head are engaged with hooks on the mold chassis under the mechanism and front panel, respectively. Before taking out the cassette chassis from the chassis, detach the leads for the heads.

4. WIRING DIAGRAM

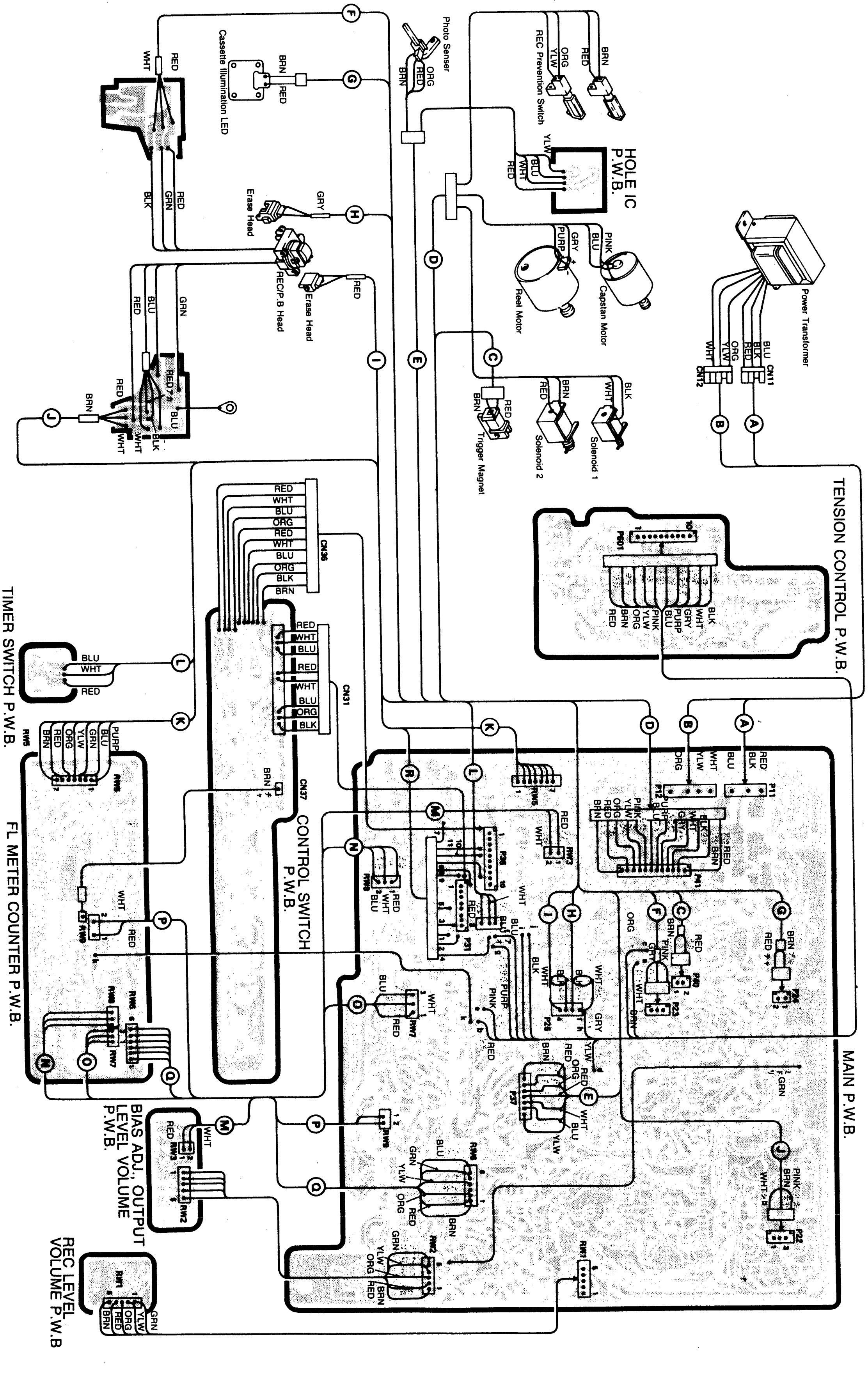
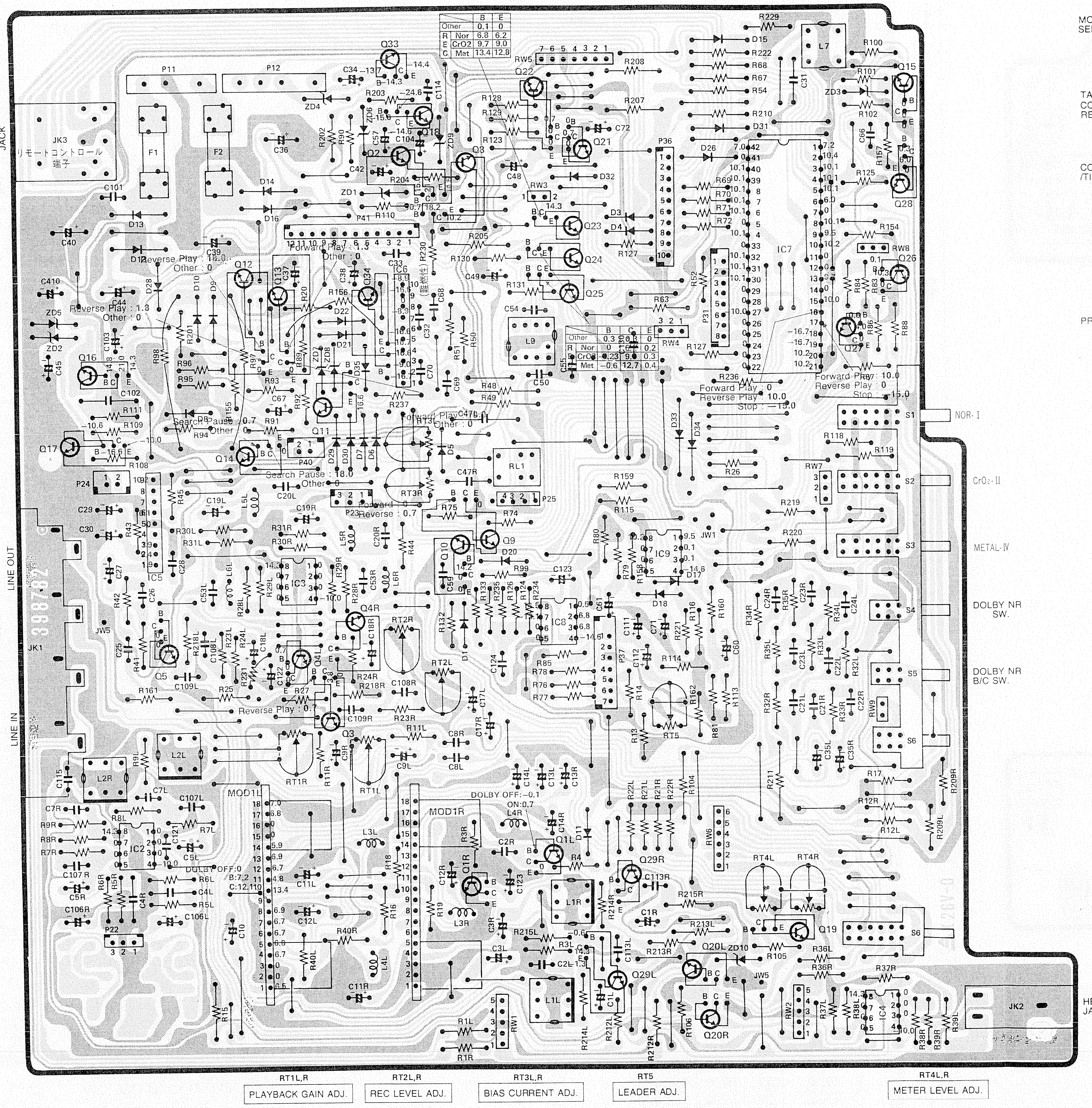


Photo Senser
Cassette Illumination LED
REC Prevention Switch
HOLE IC P.W.B.
Power Transformer
CN11
CN12
Capstan Motor
Reel Motor
Erase Head
REC/P.B Head
Solenoid 1
Solenoid 2
Trigger Magnet
TENSION CONTROL P.W.B.
P801
CN36
CN31
CN37
TIMER SWITCH P.W.B.
CONTROL SWITCH P.W.B.
FL METER COUNTER P.W.B.
MAIN P.W.B.
P11
P12
P41
P26
P21
P22
P23
P24
P25
P27
BIAS ADJ., OUTPUT LEVEL VOLUME P.W.B.
REC LEVEL VOLUME P.W.B
RW1
RW2
RW3
RW4
RW5
RW6
RW7
RW8
RW9
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R

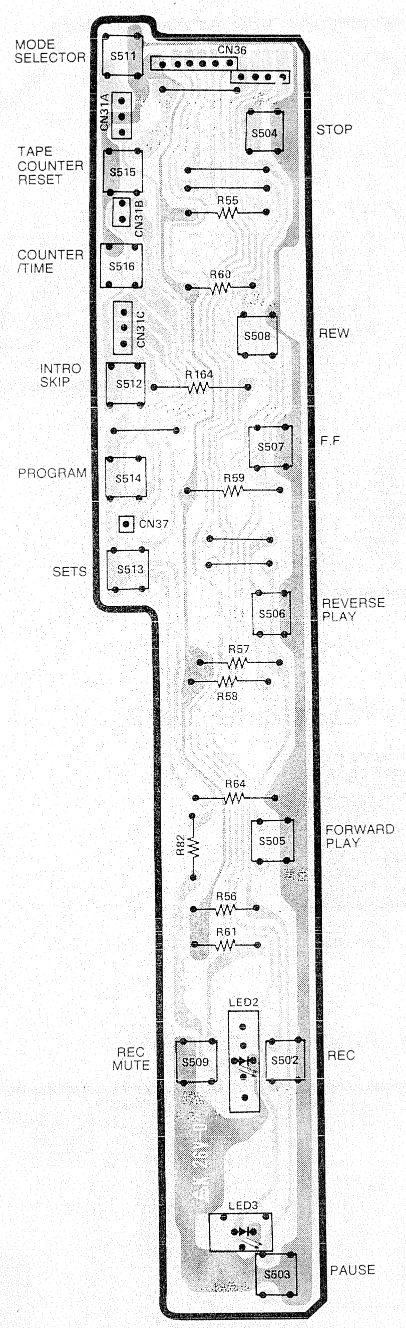
5. PRINTED WIRING BOARD (Conductor Side)

5-1. Main P.W.B.

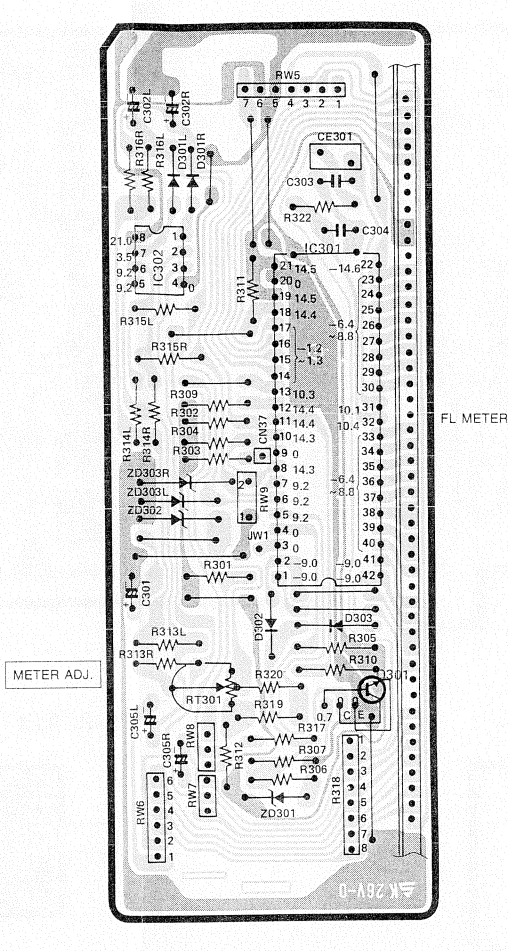
[▨ :+B, ▨ :−B, ▨ :Earth, ▨ :Other]

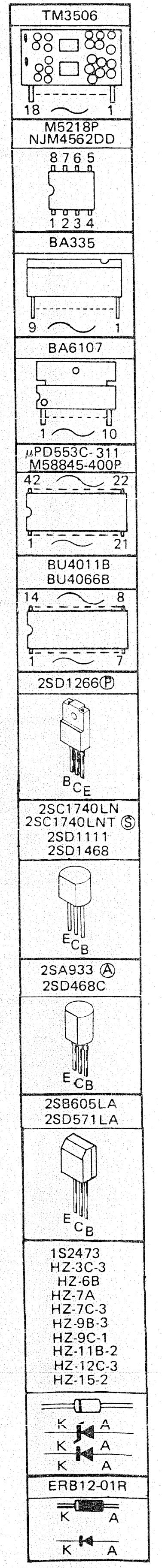

REMOTE CONTROL JACK
リモートコントロール端子
JK3
F1
F2
LINE OUT
LINE IN
JK1
IC7
IC3
IC5
IC6
IC8
IC9
IC2
IC4
MOD1L
MOD1R
NOR·I
CrO₂·II
METAL·IV
DOLBY NR SW.
DOLBY NR B/C SW.
S1
S2
S3
S4
S5
S6
JK2
HEADPHONE JACK
Forward Play : 10.0
Reverse Play : 0
Stop : 15.0
Search Pause : 18.0
DOLBY OFF : -0.1
ON : 0.7
RT1L,R
PLAYBACK GAIN ADJ.
RT2L,R
REC LEVEL ADJ.
RT3L,R
BIAS CURRENT ADJ.
RT5
LEADER ADJ.
RT4L,R
METER LEVEL ADJ.

5-2. Control Switch P.W.B.


MODE SELECTOR
S511
CN36
TAPE COUNTER RESET
S515
COUNTER /TIME
S516
INTRO SKIP
S512
PROGRAM
S514
CN37
SETS
S513
STOP
S504
REW
S508
F.F
S507
REVERSE PLAY
S506
FORWARD PLAY
S505
REC MUTE
S509
REC
S502
LED2
LED3
PAUSE
S503

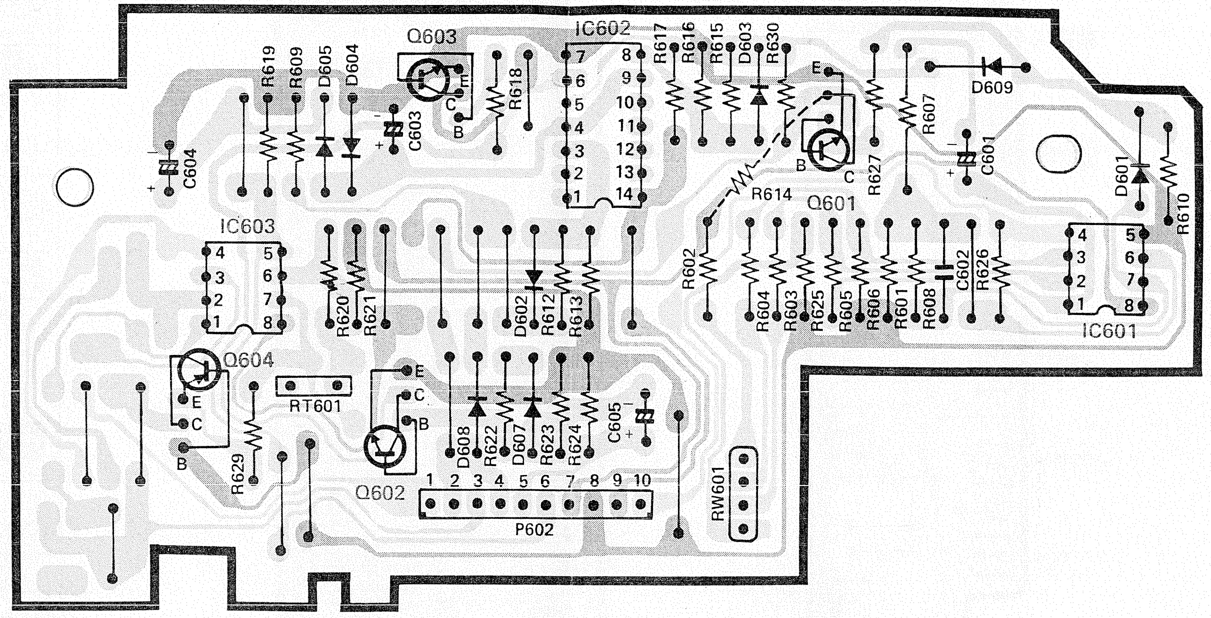
5-3. FL Mater Counter P.W.B.


RW5
CE301
IC301
FL METER
METER ADJ.
RT301
ZD301
ZD302
ZD303L
ZD303R

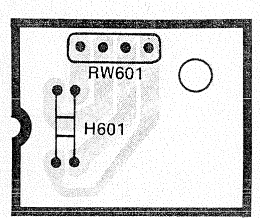

TM3506
18
1
M5218P
NJM4562DD
8 7 6 5
1 2 3 4
BA335
9
1
BA6107
1
10
μPD553C-311
M58845-400P
42
22
1
21
BU4011B
BU4066B
14
8
1
7
2SD1266Ⓟ
B C E
2SC1740LN
2SC1740LNT Ⓢ
2SD1111
2SD1468
E C B
2SA933 Ⓐ
2SD468C
E C B
2SB605LA
2SD571LA
E C B
1S2473
HZ-3C-3
HZ-6B
HZ-7A
HZ-7C-3
HZ-9B-3
HZ-9C-1
HZ-11B-2
HZ-12C-3
HZ-15-2
K A
K A
K A
ERB12-01R
K A
K A

*Axial lead cylindrical ceramic capacitor

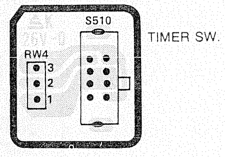
5-4. Tension Control P.W.B.


Q603
IC602
R619
R609
D605
D604
C603
R618
R617
R616
R615
D603
R630
D609
R607
C601
D601
R610
C604
IC603
R614
Q601
R627
R602
R620
R621
D602
R612
R613
R604
R603
R625
R605
R606
R601
R608
C602
R626
IC601
Q604
RT601
Q602
R629
D608
R622
D607
R623
R624
C605
P602
RW601
E
C
B
1 2 3 4 5 6 7 8 9 10

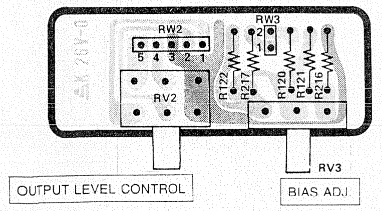
5-5. Hole IC P.W.B.



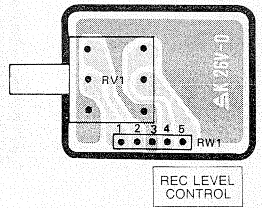
5-6. Timer Switch P.W.B.


S510
TIMER SW.
RW4
3
2
1

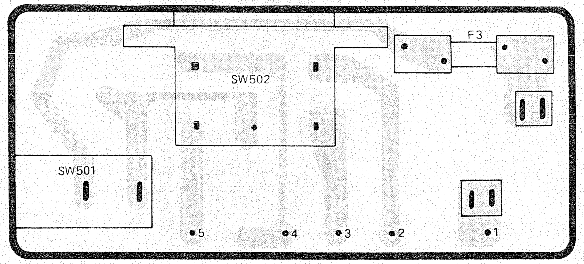
5-7. BIAS ADJUST, OUTPUT LEVEL Volume P.W.B.


RW2
5 4 3 2 1
RW3
RV2
R122
R117
R120
R121
R116
RV3
OUTPUT LEVEL CONTROL
BIAS ADJ.

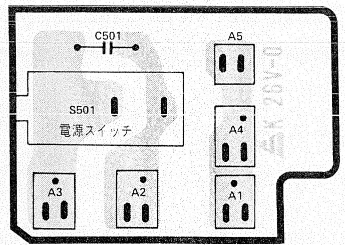
5-8. REC LEVEL Volume P.W.B.


RV1
1 2 3 4 5
RW1
REC LEVEL CONTROL

5-9. Power Supply P.W.B. (XX)


F3
SW502
SW501
5
4
3
2
1

5-10. Power Supply P.W.B. (UL & CSA)


C501
A5
S501
電源スイッチ
A4
A3
A2
A1

6. ELECTRICAL PARTS LIST

6-1. Main Board Assembly (Stock No. 58190100)

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
ICs			
IC2	58185500	NJM4562	
IC3	46580100	M5218P	
IC4	46580100	M5218P	
IC5	07252300	BA335	
IC6	58185200	BA6107	
IC7	58185400	μPD553C-342	
IC8	46580100	M5218P	
IC9	46580100	M5218P	
TRANSISTORS			
Q1L,R	48058701	2SC1740LNS	
Q2	46546701	2SD880	
Q3	48058701	2SC1740LNS	
Q4L,R	48055901	2SD1468	
Q5	48058701	2SC1740LNS	
Q8	58183500	2SD468	
Q9	48058701	2SC1740LNS	
Q10	48058701	2SC1740LNS	
Q11	48058701	2SC1740LNS	
Q12	46134200	2SD1111	
Q13	46134200	2SD1111	
Q14	48058701	2SC1740LNS	
Q15	48058701	2SC1704LNS	
Q16	58183400	2SD1266	
Q17	58183600	2SB605LA	
Q18	58183600	2SB605LA	
Q19	48058701	2SC1740LNS	
Q20L,R	48055901	2SD1468	
Q21	48058701	2SC1740LNS	
Q22	48058701	2SC1740LNS	
Q23	58183500	2SD468	
Q24	48058701	2SC1740LNS	
Q25	48058701	2SC1740LNS	
Q26	48058701	2SC1740LNS	
Q27	48058701	2SC1740LNS	
Q28	48058701	2SC1740LNS	
Q29L,R	48058701	2SC1740LNS	
Q33	48058701	2SC1740LNS	
Q34	48058701	2SC1740LNS	
DIODES			
D1	03111600	1S2473	
D3	03111600	1S2473	
D4	03111600	1S2473	
D5	03111600	1S2473	
D6	03111600	1S2473	
D7	03111600	1S2473	
D8	03111600	1S2473	
D9	03111600	1S2473	
D10	03111600	1S2473	
D11	03111600	1S2473	
D12	58184600	ERB12-01R	
D13	58184600	ERB12-01R	
D14	58184600	ERB12-01R	
D15	03111600	1S2473	
D16	58184600	ERB12-01R	
D17	03111600	1S2473	
D18	03111600	1S2473	
D20	03111600	1S2473	
D21	03111600	1S2473	
D22	03111600	1S2473	
D26	03111600	1S2473	
D28	03111600	1S2473	
D29	03111600	1S2473	
D30	03111600	1S2473	
D31	03111600	1S2473	
D32	03111600	1S2473	
D33	03111600	1S2473	
D34	03111600	1S2473	

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
ZD1	58184300	HZ11(B)-2	Zener
ZD2	58184300	HZ11(B)-2	Zener
ZD3	58183700	HZ7(A)	Zener
ZD4	58183800	HZ6(B)	Zener
ZD5	58184100	HZ15-2	Zener
ZD6	58184100	HZ15-2	Zener
ZD7	58183900	HZ99B-3	Zener
ZD8	58184500	HZ5B-1	Zener
ZD9	58184100	HZ15-2	Zener
ZD10	58184200	HZ7C-3	Zener
SEMI-VARIABLE RESISTORS			
RT1L,R	58181800	10kΩ (B)	Playback Gain Adj.
RT2L,R	58181800	10kΩ (B)	REC Level Adj.
RT3L,R	58182000	50kΩ (B)	BIAS Current Adj.
RT4L,R	58181900	20kΩ (B)	Meter Level Adj.
RT5	58181700	5kΩ (B)	Leader Adj.
RESISTORS			
⚠R15	58182200	10Ω 1/4W	Fusing
R97	46903000	56Ω 3W	Non-Inflammable
R98	46903000	56Ω 3W	Non-Inflammable
R156	00146800	22Ω 2W	Non-Inflammable
⚠R230	58182300	82Ω 1/4W	Fusing
CAPACITORS			
C1L,R	46550800	10μF 16V	Electrolytic
C3L,R	46550800	10μF 16V	Electrolytic
C4L,R	58180600	180pF 50V	Ceramic, cylindrical
C17L,R	46550800	10μF 16V	Electrolytic
C18L,R	48363800	0.1μF 50V	Electrolytic
C19L,R	46550800	10μF 16V	Electrolytic
C27	46550800	10μF 16V	Electrolytic
C30	58181000	0.15μF 50V	Electrolytic
C34	58180900	47μF 10V	Electrolytic
C35L,R	46550800	10μF 16V	Electrolytic
C36	48176100	2200μF 25V	Electrolytic
C39	48176100	2200μF 25V	Electrolytic
C40	48176100	2200μF 25V	Electrolytic
C47L,R	58180500	150pF 50V	Ceramic, cylindrical
C50	58182400	8200pF 100V	Film (Mylar)
C55	58180300	4700pF 50V	Ceramic, cylindrical
C60	58180900	47μF 10V	Electrolytic
C67	48364200	0.47μF 50V	Electrolytic
C71	58180900	47μF 50V	Electrolytic
C72	46550600	33μF 10V	Electrolytic
C101	58180400	0.01μF 50V	Ceramic, discal
C103	46551300	10μF 25V	Electrolytic
C106L,R	46551200	4.7μF 25V	Electrolytic
C108L,R	58180100	470pF 50V	Ceramic, discal
C109L,R	58180200	680pF 50V	Ceramic, discal
C112	48364000	0.22μF 50V	Electrolytic
C113L,R	58180100	470pF 50V	Ceramic, discal
C114	58180400	0.01μF 50V	Ceramic, discal
OTHER PARTS			
L1L,R	58183100	Dolby Filter	
L2L,R	58183100	Dolby Filter	
L3L,R	58182500	Trap Coil	19.8kHz
L4L,R	58182500	Trap Coil	19.8kHz
L5L,R	58182700	Trap Coil	85kHz
L6L,R	58185100	Choke Coil	3.3mH
L7	58182800	AM IF Trans	
L9	58182600	Bias OSC Coil	
MOD1L,R	58185300	TM3506 Module Ass'y	
RL1	58186500	Relay	
S1～5	58185900	Push Switch	TAPE SELECTOR, DOLBY NR

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
S6	58186200	Push Switch	MONITOR
JK1	58186800	4P Pin Jack	
JK2	58186700	Headphone Jack	
JK3	58186600	8P DIN Jack	
F1	58187100	T1A Fuse	XX
	46201500	1A Fuse	UL & CSA
F2	58187200	T1.25A Fuse	XX
	46201700	1.6A Fuse	UL & CSA

6-2. Control Switch Board Assembly (Stock No. 58190300)

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
LEDs			
LED2	58184700	GL-3PR2 (Red)	REC
LED3	58184900	SLH54YC(3) (Ylw)	PAUSE
SWITCHES			
S502	58186300	Tact Switch	REC
S503	58186300	Tact Switch	PAUSE
S504	58186300	Tact Switch	STOP
S505	58186300	Tact Switch	F. PLAY
S506	58186300	Tact Switch	R. PLAY
S507	58186300	Tact Switch	F.F.
S508	58186300	Tact Switch	REW
S509	58186300	Tact Switch	MUTE
S511	58186300	Tact Switch	REVERSE MODE
S512	58186300	Tact Switch	INTROSKIP
S513	58186300	Tact Switch	RMPS SET
S514	58186300	Tact Switch	RMPS PROGRAM
S515	58186300	Tact Switch	RESET
S516	58186300	Tact Switch	COUNTER/TIME

6-3. FL Meter Board Assembly (Stock No. 58190200)

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
ICs			
IC301	58185400	M8845-400P	
IC302	46580100	M5218P	
TRANSISTORS			
Q301	48058701	2SC1740LNS	
DIODES			
D301L,R	03111600	1S2473	
D302	03111600	1S2473	
D303	03111600	1S2473	
ZD301	58184300	HZ11(B)-2	Zener
ZD302	58184000	HZ9C-1	Zener
ZD303L,R	58184400	HZ12C-03	Zener
RESISTORS			
RT301	58181600	200Ω (B)	Semi-Variable, meter adj.
R318	58182100	68kΩx7	Resistor Array
CAPACITORS			
C302L,R	46551200	4.7μF 25V	Electrolytic
C304	58180000	68pF 50V	Ceramic, discal
C305L,R	46551200	4.7μF 25V	Electolytic
OTHER PARTS			
CE301	58182900	Ceramic Osillator	600kHz
FL301	58185700	FL Display Tube	

6-4. Tension Control Board Assembly (Stock No. 58190400)

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
ICs			
IC601	46580100	M5218P	
IC602	48063800	BU4066B	
IC603	46580100	M5218P	
TRANSISTORS			
Q601	48058701	2SC1740LNS	
Q602	48058701	2SC1740LNS	
Q603	48058701	2SC1740LNS	
Q604	48058501	2SA933	
DIODES			
D601	03111600	1S2473	
D602	03111600	1S2473	
D603	03111600	1S2473	
D604	03111600	1S2473	
D605	03111600	1S2473	
D606	03111600	1S2473	
D607	03111600	1S2473	
D608	03111600	1S2473	
D609	03111600	1S2473	
SEMI-VARIABLE RESISTOR			
RT601	58181500	10kΩ (B)	

6-5. Hole IC Board

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
H601	58185000	VHE-711H	Hole IC

6-6. TIMER Switch Board

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
S510	58186000	Slide Switch	

6-7. BIAS ADJUST, OUTPUT LEVEL Volume Board

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
RV2	58181400	10kΩ (B)	OUTPUT LEVEL
RV3	58181200	2kΩ (B)	BIAS ADJUST

6-8. REC LEVEL Volume Board

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
RV1	58181300	50kΩ (A)	Variable Resistor

6-9. Power Supply Board (XX)

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
⚠SW501	58186400	Power Switch	
⚠SW502	58186100	Voltage Selector Switch	
⚠F3	58187300	500mA Fuse	

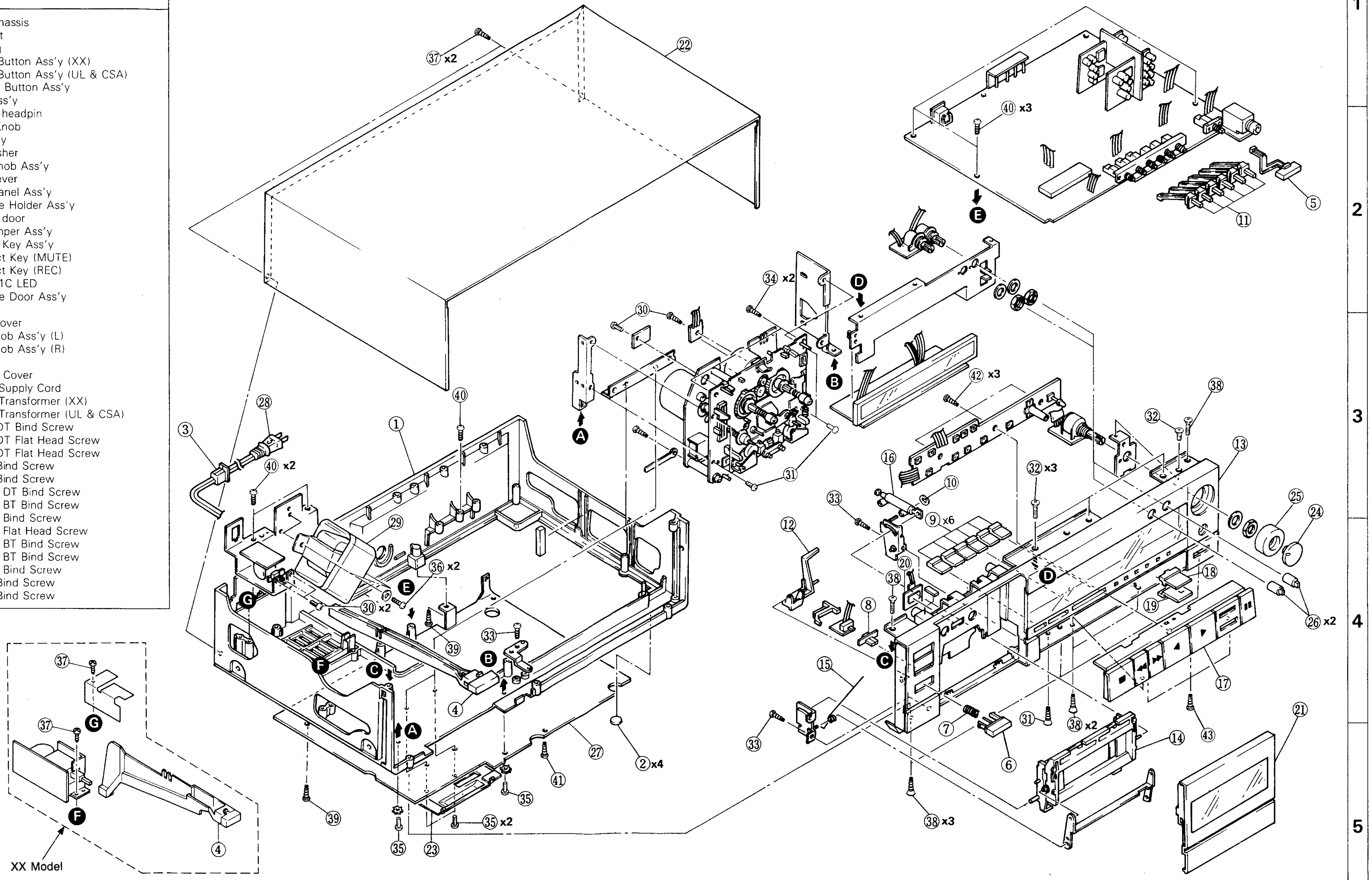
6-10. Power Supply Board (UL & CSA)

SYMBOL No.	STOCK No.	PART NAME	DESCRIPTION
⚠SW501	58186400	Power Switch	
⚠C501	46425800	0.01μF 400V	Ceramic, discal

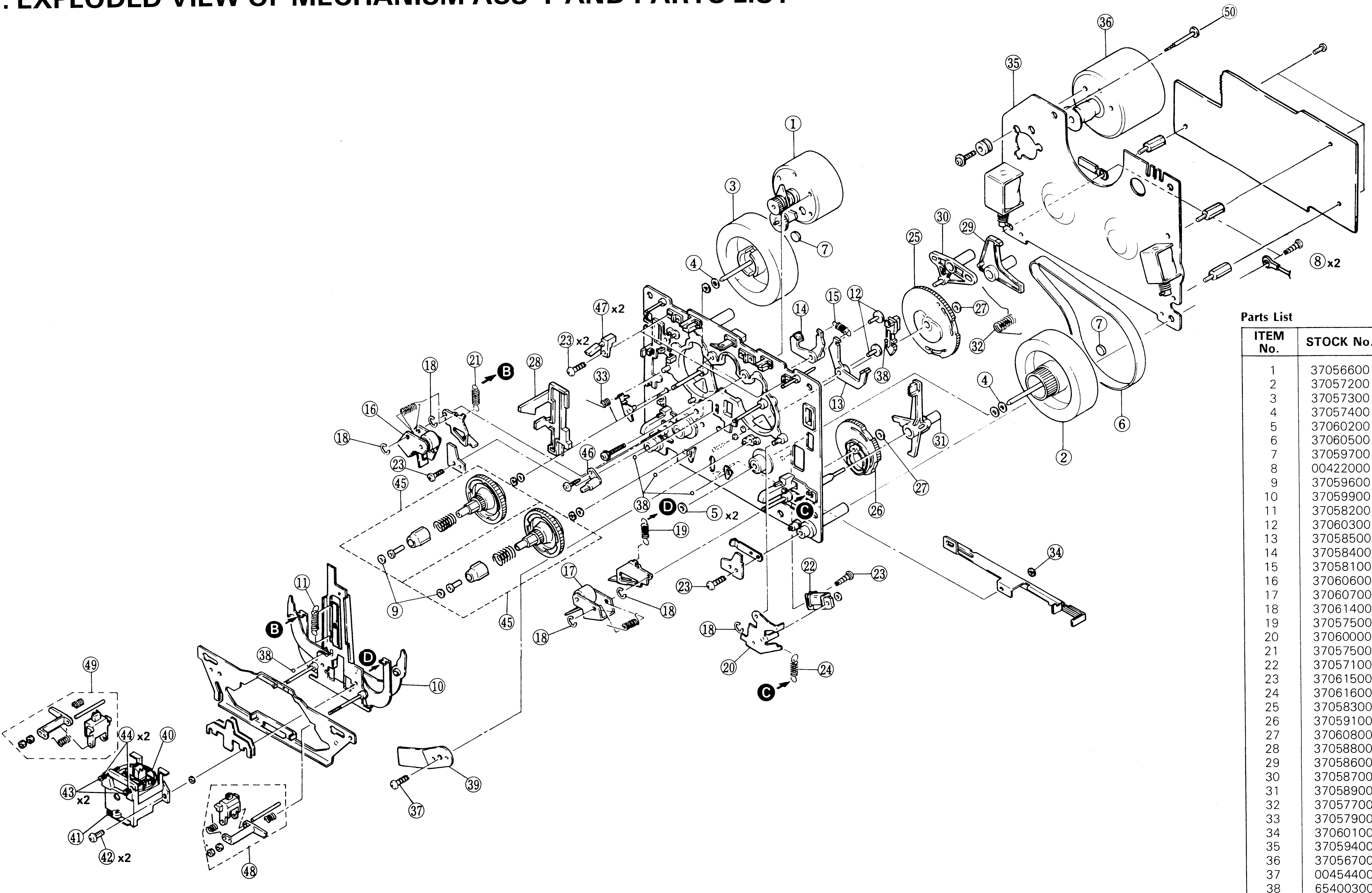
7. EXPLODED VIEW OF CABINET AND PARTS LIST

Parts List

ITEM No.	STOCK No.	DESCRIPTION
1	———	Mold Chassis
2	58189800	Leg, felt
3	58181100	Bushing
4	58187900	Power Button Ass'y (XX)
	58188000	Power Button Ass'y (UL & CSA)
5	58188400	Monitor Button Ass'y
6	58188100	Eject Ass'y
7	58190800	Spring, headpin
8	58187800	Timer Knob
9	58188200	Tact Key
10	58190900	PS Washer
11	58188700	Push Knob Ass'y
12	58188900	Eject Lever
13	58189900	Front Panel Ass'y
14	58189100	Cassette Holder Ass'y
15	58188800	Spring, door
16	58189000	Air Damper Ass'y
17	58188300	Control Key Ass'y
18	58188600	RM Tact Key (MUTE)
19	58188500	RM Tact Key (REC)
20	58184800	SLF-301C LED
21	58187400	Cassette Door Ass'y
22	58189500	Bonnet
23	58189600	Head Cover
24	58187500	REC Knob Ass'y (L)
25	58187600	REC Knob Ass'y (R)
26	58187700	Knob
27	———	Bottom Cover
⚠28	58187000	Power Supply Cord
⚠29	58183301	Power Transformer (XX)
⚠	58183302	Power Transformer (UL & CSA)
30	13122300	M3x6 DT Bind Screw
31	58191100	M3x6 DT Flat Head Screw
32	48265000	M3x8 DT Flat Head Screw
33	00422000	M3x8 Bind Screw
34	00455400	M3x8 Bind Screw
35	46267800	M3x10 DT Bind Screw
36	00456100	M4x10 BT Bind Screw
37	00455500	M3x10 Bind Screw
38	00462800	M3x10 Flat Head Screw
39	00454700	M3x12 BT Bind Screw
40	00454800	M3x14 BT Bind Screw
41	58191000	M3x14 Bind Screw
42	00454500	M3x8 Bind Screw
43	———	M3x4 Bind Screw



8. EXPLODED VIEW OF MECHANISM ASS'Y AND PARTS LIST



Parts List

ITEM No.	STOCK No.	DESCRIPTION
1	37056600	Reel Motor Gear Ass'y
2	37057200	Flywheel Ass'y (R)
3	37057300	Flywheel Ass'y (L)
4	37057400	Spring
5	37060200	PS Washer
6	37060500	Flywheel Belt
7	37059700	Flywheel Thrust Bearing
8	00422000	M3x8 Bind Screw
9	37059600	PS Washer
10	37059900	Headplate Ass'y
11	37058200	Spring, head plate
12	37060300	Pin
13	37058500	Brake (R)
14	37058400	Brake (L)
15	37058100	Spring
16	37060600	Pinch Roller Arm Ass'y (L)
17	37060700	Pinch Roller Arm Ass'y (R)
18	37061400	D=2 E-ring
19	37057500	Spring, pinch roller
20	37060000	Search Arm Ass'y
21	37057500	Spring, pinch roller
22	37057100	Trigger Magnet
23	37061500	M2x8 BT Bind Screw
24	37061600	Spring, search arm
25	37058300	Play PA Gear
26	37059100	Reverse Gear
27	37060800	PS Washer
28	37058800	Eject Slider
29	37058600	Play Trigger Arm
30	37058700	Solenoid Lever
31	37058900	Reverse Trigger Arm
32	37057700	Spring
33	37057900	Spring, eject
34	37060100	P Washer
35	37059400	Flywheel Plate Ass'y
36	37056700	DC Motor with Pulley
37	00454400	M3x6 BT Bind Screw
38	65400300	D=2 Steel Ball
39	37059800	Plate
40	37059500	REC/P.B Head Ass'y
41	37057800	Spring
42	00420500	M3x4 Bind Screw
43	37060400	Azimuth Screw
44	37057600	Azimuth Spring
45	37059000	Turntable Ass'y
46	36056500	LP101 Photo Sensor
47	37057000	Reaf Switch, Cassette detection
48	37056800	Erase Head Ass'y (R)
49	37056900	Erase Head Ass'y (L)
50	37061200	M3x30 BT Screw

A	B	C	D	E	F	G	H

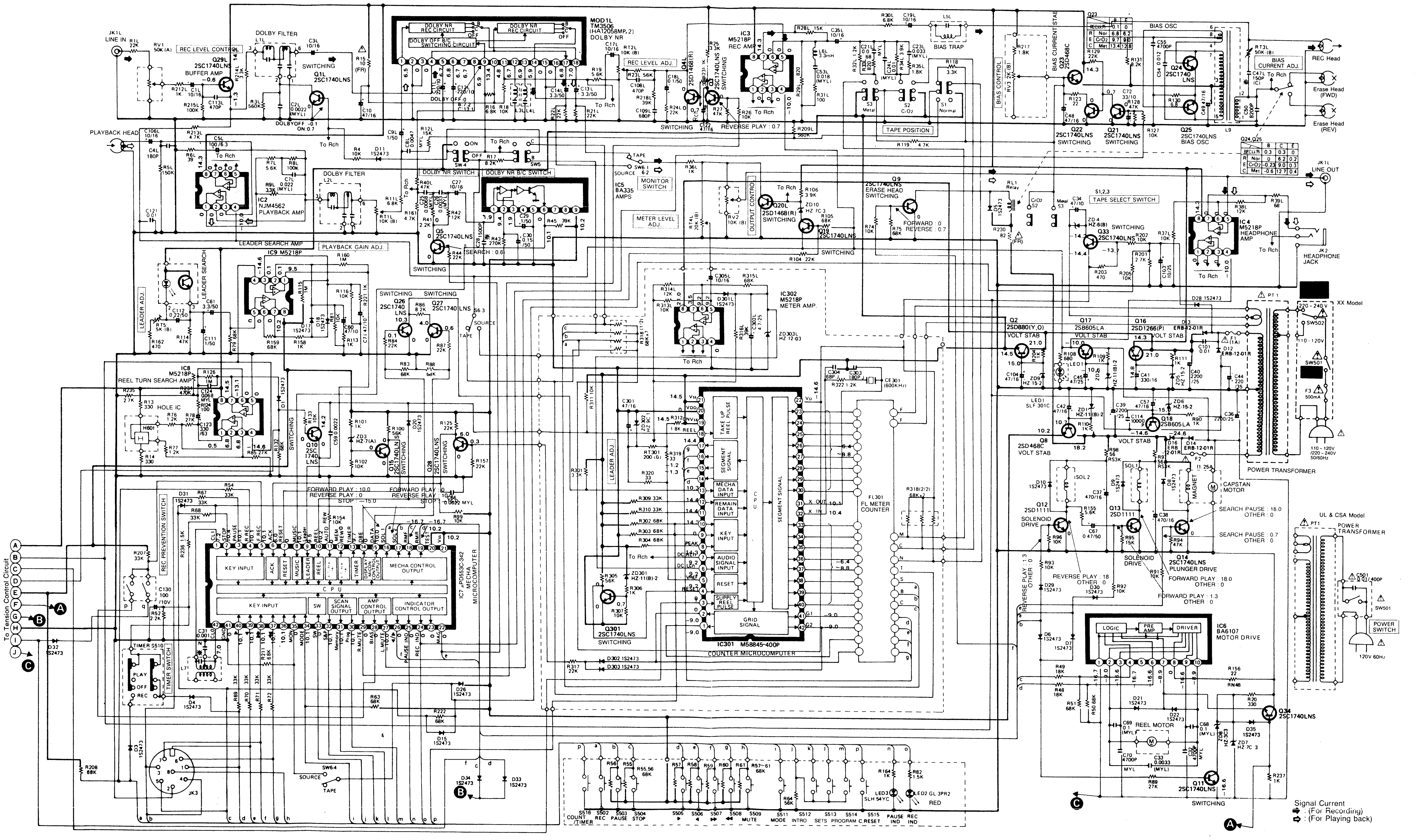
9. SCHEMATIC DIAGRAM

9-1. Main Circuit

CAUTION

Use the electrolytic capacitors with explosion-proof valve when the diameter of them is more than 10 mmø.

* : Axial lead cylindrical ceramic capacitor
⚠ is Safety Part.
Use only replacement parts recommended by the manufacturer.



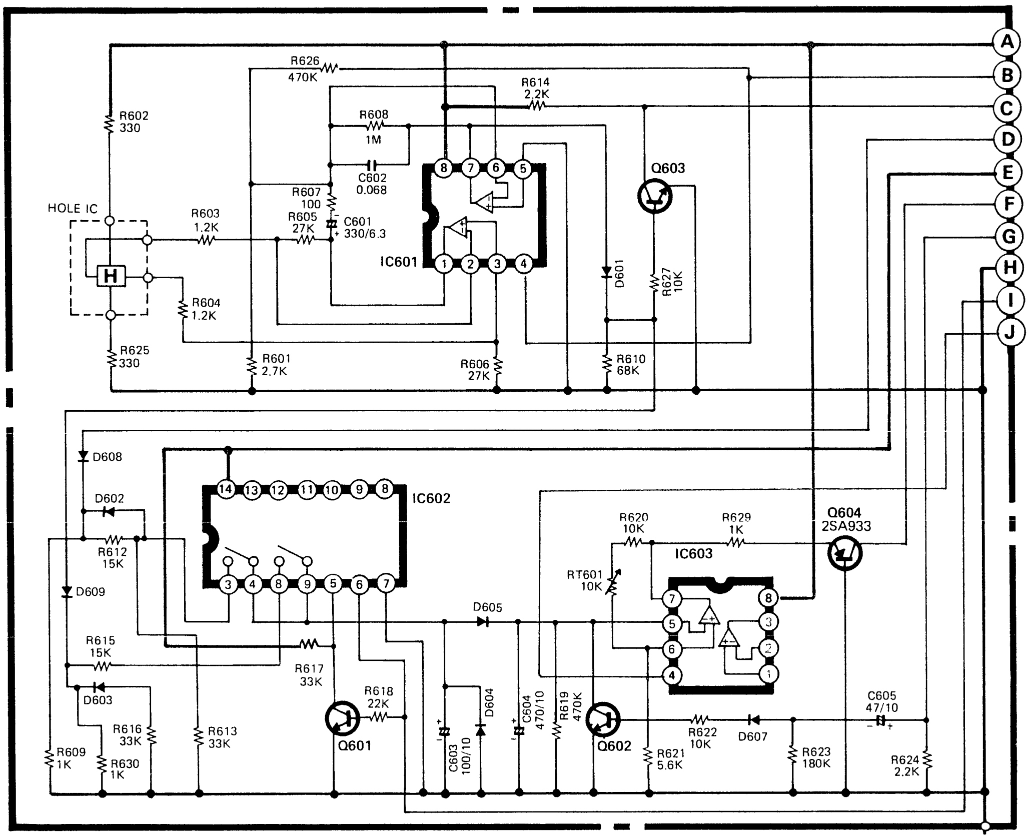
JK1L LINE IN
REC LEVEL CONTROL
Q29L 2SC1740LNS BUFFER AMP
DOLBY FILTER
Q1L 2SC1740LNS SWITCHING
DOLBYOFF -0.1 ON:0.7
MOD1L TM3506 (HA12058MP,2) DOLBY NR
DOLBY NR REC CIRCUIT
DOLBY OFF B/C SWITCHING CIRCUIT
REC LEVEL ADJ.
Q4L 2SD1468(R)
Q3L 2SC1740LNS SWITCHING
IC3 M5218P REC AMP
BIAS TRAP
S3 Metal
S2 CrO2
S1 Normal
TAPE POSITION
REVERSE PLAY : 0.7
BIAS CONTROL
BIAS CURRENT STAB
Q23 2SD468C
Q22 2SC1740LNS SWITCHING
Q21 2SC1740LNS SWITCHING
BIAS OSC
Q24 2SC1740LNS
Q25 2SC1740LNS BIAS OSC
BIAS CURRENT ADJ.
REC Head
Erase Head (FWD)
Erase Head (REV)
PLAYBACK HEAD
IC2 NJM4562 PLAYBACK AMP
DOLBY NR SWITCH
DOLBY NR B/C SWITCH
Q5 2SC1740LNS SWITCHING
SEARCH : 0.6
LEADER SEARCH AMP
PLAYBACK GAIN ADJ.
IC5 BA335 AMPS
MONITOR SWITCH
METER LEVEL ADJ.
SOURCE
TAPE
OUTPUT CONTROL
Q20L 2SD1468(R) SWITCHING
Q19 2SC1740LNS SWITCHING
Q9 2SC1740LNS ERASE HEAD SWITCHING
FORWARD : 0
REVERSE : 0.7
RL1 Relay
TAPE SELECT SWITCH
Q33 2SC1740LNS SWITCHING
IC4 M5218P HEADPHONE AMP
JK1L LINE OUT
JK2 HEADPHONE JACK
IC9 M5218P
LEADER SEARCH
LEADER ADJ.
Q26 2SC1740LNS SWITCHING
Q27 2SC1740LNS SWITCHING
IC302 M5218P METER AMP.
IC8 M5218P REEL TURN SEARCH AMP
HOLE IC
Q10 2SC1740LNS
Q15 2SC1740LNS SWITCHING
Q28 2SC1740LNS SWITCHING
Q2 2SD880(Y,O) VOLT STAB
Q17 2SB605LA VOLT STAB
Q16 2SD1266(P) VOLT STAB
LED1 SLF 301C
Q8 2SD468C VOLT STAB
Q18 2SB605LA
POWER TRANSFORMER
XX Model
SW502
SW501
F3 500mA
110-120V /220-240V 50/60Hz
REC PREVENTION SWITCH
IC7 μPD553C-342 MECHA MICROCOMPUTER
KEY INPUT
MECHA CONTROL OUTPUT
CPU
SCAN SIGNAL OUTPUT
AMP CONTROL OUTPUT
INDICATOR CONTROL OUTPUT
FORWARD PLAY : 10.0
REVERSE PLAY : 0
STOP : -15.0
IC301 M58845-400P COUNTER MICROCOMPUTER
TAKE UP REEL PULSE
SEGMENT SIGNAL
MECHA DATA INPUT
REMAIN DATA INPUT
KEY INPUT
AUDIO SIGNAL INPUT
RESET
SUPPLY REEL PULSE
GRID SIGNAL
FL301 FL METER COUNTER
Q301 2SC1740LNS SWITCHING
Q12 2SD1111 SOLENOID DRIVE
Q13 2SD1111 SOLENOID DRIVE
Q14 2SC1740LNS PLUNGER DRIVE
CAPSTAN MOTOR
SEARCH PAUSE : 18.0 OTHER : 0
SEARCH PAUSE : 0.7 OTHER : 0
REVERSE PLAY : 18 OTHER : 0
FORWARD PLAY : 18.0 OTHER : 0
FORWARD PLAY : 1.3 OTHER : 0
UL & CSA Model
POWER SWITCH
120V 60Hz
IC6 BA6107 MOTOR DRIVE
LOGIC
PRE AMP
DRIVER
REEL MOTOR
Q34 2SC1740LNS
Q11 2SC1740LNS SWITCHING
To Tension Control Circuit
TIMER S510
PLAY
OFF
REC
TIMER SWITCH
JK3
SW6-4 SOURCE TAPE
LED3 SLH 54YC
LED2 GL 3PR2 RED
S516 COUNT /TIMER
S502 REC
S503 PAUSE
S504 STOP
S505
S506
S507
S508
S509 MUTE
S511 MODE
S512 INTRO
S513 SETS
S514 PROGRAM
S515 C.RESET
PAUSE IND
REC IND
Signal Current
➡ : (For Recording)
⇨ : (For Playing back)

1
2
3
4
5

——— : +B Line, ——— : −B Line

* Design and specifications subject to change without notice for improvement.
* La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

9-2. Tension Control Circuit


A
B
C
D
E
F
G
H
I
J
R626 470K
R614 2.2K
R602 330
R608 1M
C602 0.068
Q603
R607 100
R605 27K
C601 330/6.3
HOLE IC
H
R603 1.2K
IC601
D601
R627 10K
R604 1.2K
R625 330
R601 2.7K
R606 27K
R610 68K
D608
D602
R612 15K
D609
IC602
R620 10K
R629 1K
Q604 2SA933
IC603
RT601 10K
D605
R615 15K
R617 33K
D603
R618 22K
D604
C604 470/10
R619 470K
C603 100/10
R616 33K
R613 33K
Q601
Q602
R622 10K
D607
C605 47/10
R609 1K
R630 1K
R621 5.6K
R623 180K
R624 2.2K

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NOTE

*RESISTORS

All resistors are in ohms, 1/4W, ±5% tolerance unless otherwise noted.

K : Kohm
M : Mohm
no mark : Carbon Resistor
RS : Oxied Metal Film Resistor
RN : Metal Film Resistor
FR : Fusing Resistor

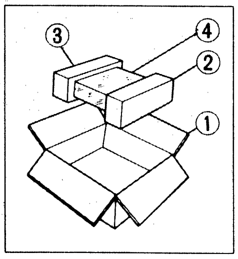
*CAPACITORS

All capacitors are in μF, 50WV unless otherwise noted.

p : pF
no mark : Ceramic Capacitor or Electrolytic Capacitor capacitance (μF)/volt (V)
MYL : Mylar (Film) Capacitor

10. PACKING LIST

ITEM No.	STOCK No.	DESCRIPTION
1	58190500	Carton Case
2	58190600	Styrofoam Packing (R)
3	58190700	Styrofoam Packing (L)
4	———	Cover



11. ACCESSORY LIST

STOCK No.	DESCRIPTION
46988900	Operating Instruction
58185800	Patch Cord
———	Remote Control Unit

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